

Safeguarding California: Preparing for Climate Risks

An Update to the 2009 Adaptation Strategy

Biodiversity and Habitat Sector

California Department of Fish and Wildlife



ECOSYSTEM SERVICES

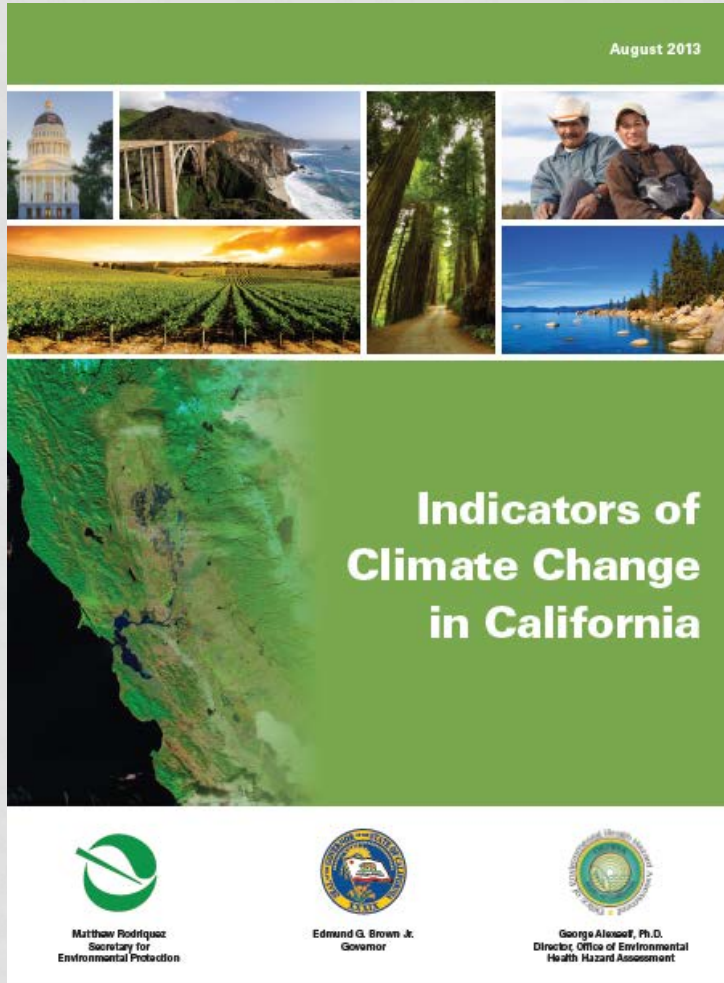
- Clean air
- Fresh water
- Carbon storage
- Food
- Timber
- Crop pollination
- Cultural value
- Recreational opportunities



STRESSES



OBSERVED IMPACTS

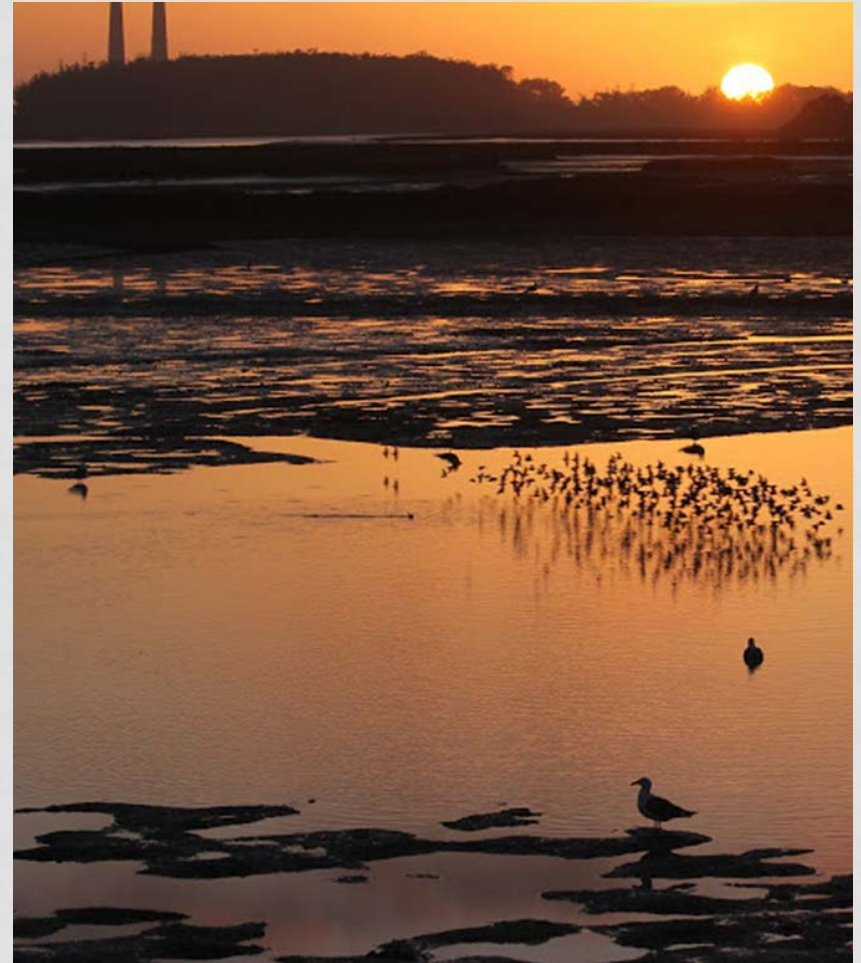


- Species range shifts
- Change in migration patterns
- Impacts to marine food web – and salmon abundance
- Auklet breeding
- Sea lion pup mortality



CHALLENGES AND RISKS

- Species migration, range shifts, and novel combinations of species
- Changes in the timing of seasonal life-cycle events
- Food web disruptions
- Pathogens, parasites, and disease
- Extinction risks



VISION



NATIONAL *fish, wildlife & plants*
CLIMATE ADAPTATION STRATEGY



Unity, Integration, and Action:

DFG's Vision for Confronting Climate Change in California



California Department of Fish and Game
September 2011

RESEARCH

CA LCC

California Landscape Conservation Cooperative

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Decision Support Tools & Data

Monitoring & Modeling Methods

Population & Habitat Assessments

Vulnerability Assessments

Conservation Planning & Design

Projects

To view projects from all 22 Landscape Conservation Cooperatives see the [National LCC Project Catalog](#).

The CA LCC projects often can be classified into several of the identified topic areas and thus are listed more than once under the topics listed to the left. For simplicity sake, the projects are only listed under the two topic areas that they align with most closely though they may be relevant to more than two topic areas.

FEATURED PROJECT

Project Helps Managers Assess Vulnerability of Tidal Marsh Birds to Climate Change

In the project [Vulnerability Analysis and Monitoring](#)

[All projects »](#)

- Climate change vulnerability assessments: rare plants, herps, and birds in CA

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This Site California

HOME STATE LOCAL INDIVIDUALS BUSINESS SCIENCE

Reports on the Third Assessment from the California Climate Change Center

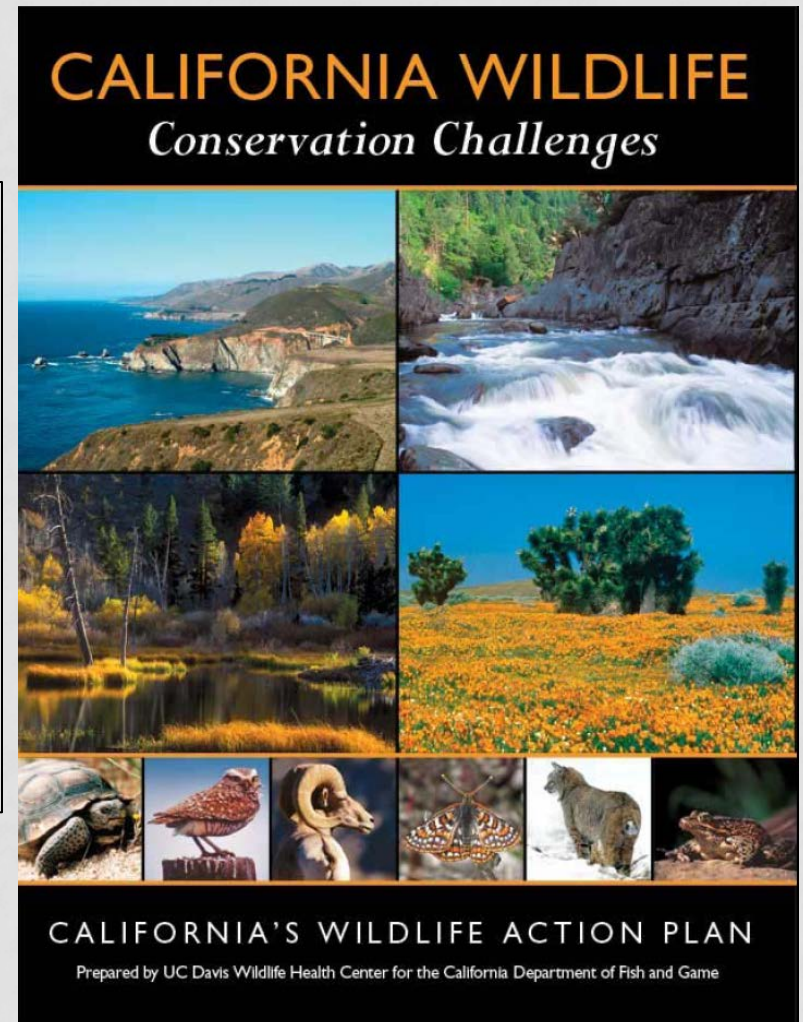
The State's third major assessment on climate change explores local and statewide vulnerabilities to climate change, highlighting opportunities for taking concrete actions to reduce climate-change impacts.

The third assessment, like its two predecessors, reflects a powerful collaborative process. Guided by a Steering Committee of senior technical staff from State agencies and outside scientific experts, 26 research teams from the University of California system and other research groups produced more than 30 peer-reviewed papers. They offer crucial new insights for the energy, water, agriculture, public health, coastal, transportation, and ecological resource sectors that are vital to California residents, businesses and government leaders.

About [California's Climate Change Assessments](#)

INTEGRATION INTO MANAGEMENT/PLANNING EFFORTS

- Create a collective vision
- Update species at risk, vulnerable spp, & SGCN
- Incorporate cc impacts & adaptation strategies



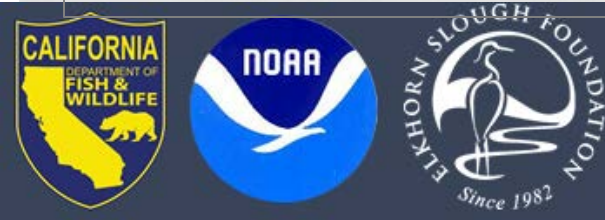
ADAPTATION ACTION: ELKHORN SLOUGH

- **Climate Research & Monitoring**

- Water Quality
- Habitat Change
- Biological Indicators

- **Adaptation Projects**

- Oyster restoration
- Wetland-upland ecotone as indicator
- Tidal restoration



EDUCATION: CDFW CLIMATE COLLEGE

Course components

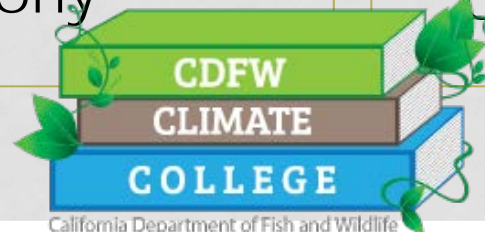
- Monthly lectures (10 months)
- Recommended readings
- Participation in online forum
- Final project
- Opportunities for certification
- Awards ceremony

Course summary

- 348 total participants
- 23 projects submitted
 - 19 CDFW staff
 - 8 partners
- 9 lectures/guest speakers

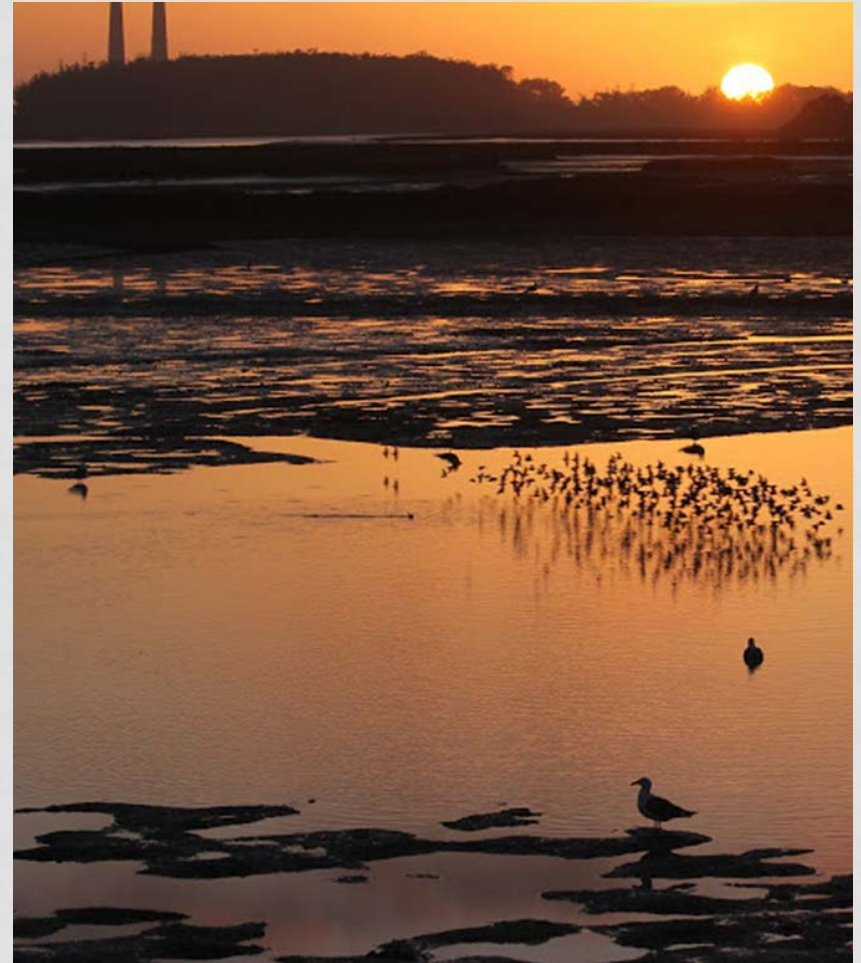
More climate college to come!

- Marine focus with tribal component



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A vibrant field of orange poppies under a clear blue sky. In the foreground, several tall, slender stalks of purple lupines stand out against the sea of orange. The lupines have small, bell-shaped flowers clustered along their stems. The poppies are in various stages of bloom, their bright orange petals contrasting sharply with the green foliage and the purple of the lupines. In the background, rolling hills are visible under a bright, sunny sky.

Questions?
Comments?